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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/941,399	08/28/2001	Yasushi Takatori	080974	6150

20350 7590 12/02/2005

TOWNSEND AND TOWNSEND AND CREW, LLP  
TWO EMBARCADERO CENTER  
EIGHTH FLOOR  
SAN FRANCISCO, CA 94111-3834

EXAMINER

HASHEM, LISA

ART UNIT	PAPER NUMBER
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2645

DATE MAILED: 12/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	09/941,399	TAKATORI ET AL.	
	Examiner	Art Unit	
	Lisa Hashem	2645	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 12 September 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-5, 7, 9 and 10 is/are allowed.
- 6) ☒ Claim(s) 6 and 8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## **FINAL DETAILED ACTION**

### ***Claim Objections***

1. Claim 8 recites the limitation "the transfer function". There is insufficient antecedent basis for this limitation in the claim.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claim 6 is rejected under 35 U.S.C. 102(e) as being clearly anticipated by U.S. Patent Application Publication No. 2003/0171134 by Doi et al, hereinafter Doi.

Regarding claim 6, Doi discloses an adaptive antenna control method used for a radio communication system or PDMA system (section 0006, lines 1-10; section 0038, line 1 – section 0053, line 2; Fig. 10), the radio communication system comprising a plurality of radio base stations (Fig. 10: 1, 6) and a plurality of terminal stations (Fig. 10: 4, 8) capable of communicating with the radio base stations, each radio base station including an adaptive antenna having a plurality of antenna elements (Fig. 1: #1 thru #4; Fig. 10, 2), weighting circuits for respectively weighting reception signals of the plurality of antenna elements (Fig. 1: 12-1.1 thru 12-4.1), and a signal combining circuit (Fig. 1, 13.1) for combining the reception signals of the antenna elements weighted by the weighting circuits (section 0083, lines 1-11), the method comprising:

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for reception by each radio base station (Fig. 7, 10: 1, 6), estimating an interference wave power given by a transmission signal from each of the plurality of terminal stations (PS1, PS2), and determining at least a weight in the adaptive antenna of each radio base station and a transmission power of each terminal station to minimize a sum of square errors between reception signals and desired signals for all the terminal stations which simultaneously use the same communication channel (section 0110, lines 1- 10; section 0148, line 1 – section 0179, line 8).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Doi, as applied to claim 6, and in further view Kasami.

Regarding claim 8, a method according to claim 6, wherein Doi does not disclose an intensive control station.

Kasami discloses an adaptive antenna control method used for a radio communication system built by a plurality of radio base stations and a plurality of terminal stations or mobile stations capable of communicating with the radio base stations, each radio base station including an adaptive antenna having a plurality of antenna elements (see Abstract), comprising: a transfer function (signal) obtained by each radio base station (via a mobile station) is transferred to an intensive control station connected to each of the plurality of radio base stations through a wired

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communication line or wireless communication channel, and the intensive control station determines the weight in the adaptive antenna of each radio base station (see Abstract; section 0013, line 1 – section 0021, line 4).

It would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the adaptive antenna control method of Doi to include an intensive control station as taught by Kasami. One of ordinary skill in the art would have been lead to make such a modification since the intensive control station controls the plurality of base stations and the plurality of terminal stations and calculates the weight in the adaptive antenna of each radio base station.

#### ***Allowable Subject Matter***

6. Claims 1-5, 7, 9, and 10 are allowed.

7. The following is a statement of reasons for the indication of allowable subject matter:

The very specific nature of the ‘...estimating an interference wave power given by the transmission signal from each of the plurality of radio base stations...’ of claim 1 was not found, suggested, or made evident by the prior art. Claims 2-5, 7, 9, and 10 are dependent upon claim 1 and as such are allowable.

#### ***Response to Arguments***

8. In regards to Applicant’s arguments on pages 20 and 21 regarding claims 6, Doi clearly discloses:

for reception by each radio base station (Fig. 7, 10: 1, 6) (wherein the PDMA system consists of a plurality of radio base stations capable of communicating with a plurality of terminal stations and each radio base station has a structure as shown in Fig. 1), estimating an interference wave

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power given by a transmission signal (e.g. reception power) from each of the plurality of terminal stations (PS1, PS2) (section 0179, lines 1-8), and determining at least a weight in the adaptive antenna of each radio base station (e.g. weight vector) and a transmission power of each terminal station to minimize a sum of square errors (section 0164, lines 1-10) between reception signals and desired signals for all the terminal stations which simultaneously use the same communication channel (section 0110, lines 1- 10; section 0148, line 1 – section 0179, line 8).

Regarding claim 8, Doi in view of Kasami clearly disclose all claimed limitations as noted above. Wherein Doi clearly discloses estimating an interference wave power from a plurality of terminal stations and minimizing square errors.

9. Applicant's arguments filed 9-12-2005 regarding claims 6 and 8 have been fully considered but they are not persuasive.

### *Conclusion*

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- The following patents disclose an adaptive antenna control method: U.S. Patent No. 6,714,584 by Ishii et al

12. Any response to this action should be mailed to:

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**Or faxed to:**

(571) 273-8300 (for formal communications intended for entry)

**Or call:**

(571) 272-2600 (for customer service assistance)

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lisa Hashem whose telephone number is (571) 272-7542. The examiner can normally be reached on M-F 8:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Fan Tsang can be reached on (571) 272-7547. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (571) 272-2600.

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14. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LH

lh

November 23, 2005

  
FAN TSANG  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600